Are there Regional Variations in the Psychological Cost of Unemployment in South Africa?

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Abstract

Are certain groups of unemployed individuals hurt less by unemployment than others? This paper is an attempt to test the hypothesis that non-pecuniary costs of unemployment may vary between societies with different unemployment rates. Using cross-sectional data from the SALDRU93 survey, we show that individuals' reported well-being levels are inversely related to unemployment for South African adults as to be expected in richer countries. Reported well-being levels are shown to be associated negatively with regional unemployment rates for the employed. However, unemployment appears to hurt less for the individual if unemployment rates in the society are high. (99 words).

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1 Introduction

Recent research on the link between unemployment and measures of subjective well-being has generated some growing interests from economists and social scientists alike. A common result of studies on the psychological e¤ects of joblessness on individuals in advanced western economies (Fryer and Payne, 1986; Clark and Oswald, 1994; Darity and Goldsmith, 1996; Theodossiou, 1998; Winkelmann and Winkelmann, 1998) is that unemployment is signi…cantly correlated with lower levels of reported well-being, even when controlling for the e¤ects of income. Similar results are also obtained for transitional economies (Namazie and Sanfey, 2001 for Kyrgzstan; Lelkes, 2002 for Hungary) and other less-developed countries (Graham and Pettinato, 2001 for Latin Americas, and Kingdon and Knight, 2001 for South Africa).

However, less attention has been paid to the question regarding whether certain groups of individuals are hurt less by unemployment than others. One of the potential concerns lies on the extent to which people su¤er from their own unemployment when a large proportion of other people living in the region are also out of work. The current proposition is that stigma of joblessness is abated when there is more of it around, partly because social disapproval on the unemployed will be less prevalent if unemployment hits many other people at the same time. Early evidence of positive externality from others' unemployment on the psychological well-being of the unemployed comes from the medical literature's …ndings of better mental health (Jackson and Warr, 1986) and fewer suicide attempts (Platt and Kreitman, 1990; Platt et al, 1992) by the unemployed in high unemployment regions. Clark (2003) extends the analysis to be applied on the reported mental well-being of the unemployed across di¤erent parts of the UK, using a rich panel data from the British Household Panel Survey (BHPS). Through a multivariate analysis, he is able to show that others' unemployment at the regional level, as well as partner and household levels, is signi…cantly and positively correlated with the well-being of the unemployed. Given the importance of behaviour models where individual's behaviour is typically derived from utility maximization, the varying incidence of unemployment across di¤erent regions can have important psychological implications for regional labour market hysteresis. This is because, as is also the case for the unemployed individuals in the UK, a smaller well-being gap between the employed and

the unemployed (when unemployment rate for other people in the area is higher) may provide a reduced incentive for the unemployed to …nd work: according to Clark's …nal results, those who were hurt less by unemployment were also less likely to look for a new job, and one wave into the future, were more likely to remain unemployed.

The present paper, extending from Clark's paper, aims to investigate possible regional variations in the "psychological costs" of joblessness when aggregated unemployment is extremely high, using a cross-sectional data[1] from the South African Labour and Development Research Unit (SALDRU). The additional hypothesis is that the well-being gap between the unemployed and the employed may well be negative, i.e. the unemployed report higher well-being than the employed, when unemployment of others in the area is very high. South Africa o¤ers a perfect scenario for testing as it has one of the highest unemployment rates in the world, ranging from 31% in 1993 to nearly 42% in 2002 in broad de…nition[2]. Moreover, a closer examination on the unemployment rates for di¤erent groups also reveal great disparity in the distribution of unemployment by region as well as race and gender. We begin by showing that unemployment, both at the individual and household levels, is associated with lower levels of reported well-being. This …nding seems to con…rm the involuntary nature of unemployment. More importantly, the South African data also supports the notion that unemployed individuals may be more content with their own fate when there is a large proportion of other people who are also out of work living in the same cluster area. In addition, this positive relationship between the unemployed's well-being and cluster unemployment rate appears to be stronger for males than for females. The estimates also suggest for the male sample that the employed can have lower well-being than the unemployed when relevant others' unemployment in the area is higher then 28%, which accounts for about a third of the unemployed males in the sample.

The paper is structured as follows. Section 2 describes the data and how subjective well-being is measured for South Africa. Section 3 looks at the contemporaneous relationship between own unemployment status

[1]Although we recognise that panel data would be better, it is still interesting to look at a cross-section in an unusual contry like South Africa.

[2]Source: SALDRU data (1993) from South African Labour and Development Research Unit; Labour Force Statistics data (2002) from Statistical Releases of Statistics South Africa.

and reported well-being. Section 4 presents the main empirical results on the role of others' unemployment in the regression, and examines other related issues, and Section 5 concludes.

2 Data and Measures of Subjective Well-being

The current article uses data from the national survey of South Africa, carried out jointly by the World Bank and the South African Labour and Development Research Unit (SALDRU) in Cape Town, with approximately 8,800 randomly selected households, from as many as 360 cluster areas, taking place in the survey[3]. The data is of a cross-sectional nature, collected during the last …ve months of 1993 - just shortly before the election that made Nelson Mandela the South African president in 1994, and contains sets of information on household composition and personal sociodemographic status.

As part of the project, one representative from each household was asked to evaluate the overall well-being at the household-level. The Perceived Quality of Life (PQOL, henceforth) question was "Taking everything into account, how satis…ed is this household with the way it lives these days?"(Section 9, Question 1). The ordinal answers, ranking from being very satis…ed (5) to very dissatis…ed (1) with life, are used as proxy utility data in our analysis.

To consider the case for happiness regression equations, let us turn to previous studies using the same set of proxy well-being data. Through general observation analyses, Møller (1996) and Klasen (1997) found unequivocal links between poor living conditions and low PQOL scores. A more formal investigation carried out by Kingdon and Knight (2001) con…rm some of the relationships between household's well-being levels and the aggregated household-level data found in previous literature. For instance, they …nd household unemployment levels to be negatively correlated with the reported well-being at the household-level, after controlling for income and other sociodemographic variables. A recent study on happiness in South Africa also shows that PQOL respondents draw as much information from themselves in the evaluation of household's well-being levels as from others living in the same household (Powdthavee, 2003). Important

[3]As community cluster is de…ned by geographical region, we will use, for simplicity, the term "regional" and "cluster" interchangably throughout this paper.

for the discussion here, however, is that previous studies on the PQOL data have consistently suggested the structure of the well-being responses to be similar in South Africa as in the more advanced industrial economies[4].

The analysis is for the sample of individuals aged 18-65 at the time of the interview. We omitted individuals aged 16-17 from our analysis because even though most had answered the employment question only a very small proportion were selected to respond to the PQOL question. After deleting records with missing values, we obtain a sample with a total of 6,421 observations, 736 of whom were currently unemployed at the time of the interview, giving an average unemployment rate (measured as the ratio of unemployed persons to the sample of working-age individuals) of 11.5%. Table 1 displays the distribution of PQOL responses of the current sample. Taking unemployment rate by community cluster, and allowing it to vary across individuals, gives an average cluster unemployment rate of 15.7%, with a maximum rate of 58% for a single cluster, which is to be analysed in the following sections.

[TABLE 1 HERE]

3 The Correlation Between Unemployment and Perceived Quality of Life Response

Empirical research that relates labour market status to happiness measures has been generating one consistent evidence regarding the e¤ect of unemployment on subjective well-being. The standard result has been that there exists a substantial, non-pecuniary cost of unemployment on psychological well-being. The negative e¤ect of joblessness, documented in the economic literature by Clark and Oswald (1994), was shown to be signi…cantly larger in depressing the mental health of an average UK worker than any other negative life events such as divorce and separation. Blanch‡ower and Oswald (2003) illustrated the psychological

[4]See Easterlin (1974, 1995), Di tella et al (1997) Oswald (1997), Frey and Stutzer (2000), Gerdtham and Johannesson (2001), Blanch‡ower and Oswald (2003) for some examples of happiness research in the advanced industrial economies.

cost of unemployment in terms of monetary value by showing via calculations that it would take a rise in extra income at the mean of around $60,000 per annum to compensate men for unemployment in the US, comparing to a rise of $30,000 per annum for being black and $100,000 per annum for a stable marriage. Controlling for the e¤ects of income, the same robust result on substantial negative e¤ects of unemployment has been found among studies with di¤erent measures of psychological well-being, including War et al, 1988; Darity and Goldsmith, 1996; Theodossiou, 1998; Frey and Stutzer, 1999; Di Tella et al, 2001; Kingdon and Knight, 2001, 2003). Panel studies also suggest the detrimental e¤ect of unemployment on happiness to be casual, i.e. the negative impact persists even after the individual …xed e¤ects are controlled for,.and that causality is more likely to be running from joblessness to dissatisfaction rather than the other way around (see Winkelmann and Winkelmann, 1998) for a review on unemployment in panel data).

We begin our analysis for South Africa in the same vein as that of other scholars by asking whether the unemployed are on average signi…cantly less dissatis…ed with life than the employed with regular wages. To provide some information about the correlations in the raw data, Table 2 summarises the relationship between PQOL and current labour force status in the SALDRU. In consonance with other happiness studies, unemployed individuals report, on average, a signi…cantly lower well-being score than those currently employed with regular wages: the hypothesis that the mean PQOL scores between the two labour force categories are equal can be rejected at the 1% level. The non-participants, which include housewives, students in formal education, the disabled, and the retired are happier than the unemployed, while the formally employed report, on average, a considerably higher PQOL level than the informally employed, e.g. casual wage workers and the self-employed.

[TABLE 2 HERE]

However, not all unemployed individuals are less happy than their counterparts. One explanation for the large variation in the well-being scores is that the PQOL question asked individuals to assess well-being at the household, rather than at the individual, level. To account for the household e¤ects, Table 3 shows the household rates of di¤erent labour market characteristics against each of the reported well-being levels.

The same result is found at the household level: people who reported themselves as less satis…ed than others are also likely to be found living in households with a high unemployment rate.

[TABLE 3 HERE]

We consider the well-being function to have the general form of

$$W_h = W(Ue_h; :::) \tag{1}$$

where W_h is the well-being index at the household level of some description, and Ue_h is the average unemployment rate across all household members. We assume that, holding other household members' unemployment status and everything else constant, the respondent's own unemployment status is associated with lower levels of PQOL. In this paper the well-being index at the household level, W_h, is thought to be captured by responses to the question on quality of life, PQOL, on a scale of 1 to 5. As PQOL score is measured ordinally, not cardinally, the ordered probit model is used to estimate the empirical counterpart to the well-being equation (1). To correct the correlated errors, we include in the estimation cluster controls to capture any grouping e¤ects present in the data set (Moulton, 1990).

[TABLE 4 HERE]

Table 4 reports the results of happiness regressions using the SALDRU data. Panel A presents a simple speci…cation that includes only the PQOL respondent's labour force status (one for each household) as an explanatory variable, with the omitted group being those in regular wage employment. The dummy variables for informal workers (the self-employed and casual wage employment) and the non-participants (housewives, students, the disabled, and the retired) are all negative and signi…cant. The estimated coe¢cient for the unemployment variable is also negative and signi…cantly large in the absolute size when compared to other categories of labour force status.

Panel B controls for a number of respondent's personal characteristics in the happiness regression, adding dummies for education, gender, age, age squared, and health[5]. We also control for both the respondent's

[5]The dummy for individual's health status is di¤erent from the usual self-rated health status in a 4-point scale

household characteristics as well as community characteristics. This includes, as controls for household characteristics, dummies for race and location of the household (rural/urban), log of household monthly income, two types of comparison income variables[6], and the size of the household, whilst community controls include a number of variables with cluster information, i.e., …ve types of community roads, the availability of public transport, nine provincial dummies, and cluster food price. With these controls, the estimated coe¢cient on unemployment remains negative with a z-statistic of 2.95. The majority of dummy variables on the informally employed and non-participant categories continue to be negative and signi…cant with a full set of personal controls on the respondent. It should be noted that these negative relationships between well-being and the nonunemployment variables are independent of the current household income, as household income is controlled for in our multivariate analysis.

In addition, we …nd that the signs of estimated coe¢cients are the same in South Africa, in most comparable cases, as is the case in more-developed countries. For example, a proportionate increase in household income is associated with higher well-being levels, while black African households are more likely to report, on average, a much lower PQOL score than any other race, ceteris paribus. There is a non-linear relationship between age and happiness levels, with the minimum being around the middle of life (early to mid 40's). However, a higher level of education does not seem to correlate with higher well-being responses: a dummy for an education level at STD 9-10 is negative with a z-statistic of 2.25. The …nding of negative coe¢cient on education is nevertheless not unique to the research in this …eld. War (1992) and Clark and Oswald (1996) have also discovered education to enter well-being regressions negatively and signi…cantly.

(From 'very poor health' to 'excellent health', for example) used in the happiness literature and only takes into account the respondent's health status in the past 2 weeks.

[6]We include both internal and external comparison income variables into our regression. External comparison income (relative income variable) measures a direct comparison where the individual compares his income to others in his community. This is represented by own household income/average income of other households in the cluster. Internal comparison income variable, on the other hand, measures a personal consumption experience and is proxied by a dummy variable containing information as to whether the individual thinks that the …nancial position of his household today is better, the same, or worse o¤ when compared with that of his parents when they were at the same point in their lives.

One plausible explanation is that education leads to higher aspirations, and if this is not met by an increase in income it could lead to a drop in the well-being level, holding everything else constant. However, it is more plausible that low satisfaction may just come from the existence of wage and job discrimination towards the higher educated (see Knight and McGrath, 1977; Moll, 1990 for a review on discrimination in workplaces in South Africa before the end of apartheid law in April, 1994).

To account for personal characteristics of other household members, Panel C replaces personal variables in Panel B with aggregated personal characteristics at the household level, i.e. the unemployment variable that contains only the PQOL respondent's unemployment status before now becomes the proportion of unemployed individuals in the household, etc. The equation estimated in Panel C is therefore the closest empirical counterpart to the well-being function stated in equation (1). Unemployment continues to enter the regression negatively, while the estimated coe¢cients on other aggregated labour force status at the household level have either changed sign or lost their signi…cance. This suggests unemployment to be the only labour market variable that have both individual level data as well as household level data signi…cantly and negatively correlated with the reported PQOL. In contrast to Panel B, higher education at the household level now associates positively with the overall well-being response: the estimated coe¢cient on aggregated education level at STD 10 or higher is 0.279 with a z-statistic of 2.42.

Since the coe¢cients from ordered probits cannot be interpreted directly as marginal e¤ects, 'compensating income variations' can be calculated instead to illustrate the estimated main e¤ect of the unemployment variable. Given that our income variable is in terms of log household income, compensating income variations (CIV) equation can be written as follows:

$$CIV = Y \left[\exp\left(\frac{\gamma_1 - \gamma_0}{\delta_{\ln Y}} \right) - 1 \right] \tag{2}$$

where CIV is compensating income variations, i.e. income required to compensate an average individual for a drop in psychological well-being resulting from unemployment, Y is household income, γ_1 represents the reference coe¢cient for employment with regular wages, γ_0 as the coe¢cient of being unemployed, and δ is the estimated coe¢cient on log household income. Based on the coe¢cient on log household income of 0.088

(Table 4, Panel B), equation (2) tells us that, for an average individual with a household monthly income of 1,000 rand, an extra income of approximately 8,400 rand per month is required to compensate for loss in psychological well-being resulting from unemployment. This implies that it would take a substantial amount of additional income to raise the level of psychological well-being high enough to just offset the negative effect of unemployment. A similar result is obtained if we were to base our calculation on the estimated log income coefficient at the household level data (Table 4, Panel B), suggesting that non-pecuniary costs of unemployment, both at the individual and household level, may be substantially larger than the estimate loss of income resulting from unemployment.

4 The Role of Others' Unemployment by Region

We investigate in this section the role of regional unemployment rate on the reported well-being of the unemployed. The first and standard externality from the regional unemployment rate is negative: e.g. the higher the regional unemployment rate, the lower the chance of becoming re-employed again if I am myself unemployed. On the other hand, the stigmatizing effect of unemployment is thought to be less prevalent when there is more of it around. With less social disapproval in high unemployment areas, the externality from others' unemployment on the unemployed's well-being can be positive as well as negative: e.g. the higher the regional unemployment rate, the less worse I feel about myself for being out of work[7].

The two opposing effects from others' unemployment on the unemployed's well-being are difficult to untangle in theory, making the question on whether which type of externality affects the unemployed more of an empirical question. However, recent evidence suggests that the correlation between regional unemployment

[7] This can also be explained by the model of social custom. The size of the effect of own unemployment on individual utility is thought to depend upon the strength of the code set by the societal members. If by staying employed is the societal code, then unemployment can have a negative psychological effect on individual well-being through mediums of social sanction. However, the negative effect is believed to be smaller if more people are also hit by unemployment and the code is weakened. See Akerlof (1980) and Romer (1984) for reviews of the social custom theory.

rate and psychological well-being might be positive, rather than negative, for the unemployed. For example, Clark and Oswald (1994) have been able to demonstrate for the UK labour force participants, using the …rst wave of the BHPS data, that the average well-being gap between the employed and the unemployed tended to be smaller in high unemployment regions. This result is later con…rmed in Clark (2003)'s work where he shows using the data from the …rst seven waves of the BHPS that the unemployed's well-being is strongly positively correlated with others' unemployment at the couple, household, and regional level[8]. In addition, Kingdon and Knight (2003) …nd that unemployment is associated signi…cantly with lower perceived well-being of households only in cluster areas with low unemployment rate. However, despite the robust …nding for the UK, empirical work on psychological impacts of unemployment on di¤erent groups of people in less-developed labour market conditions remains relatively scarce.

[FIGURE 1 HERE]

Figure 1 extends the analysis on whether unemployment externality at the regional level a¤ects individual well-being di¤erently using the SALDRU data. Here, the average PQOL score of the employed with regular wages and the unemployed at the individual level, i.e. the PQOL respondent's labour force status, is calculated by community cluster (de…ned by geographical region). The di¤erence is then plotted against the average unemployment rate in the community, which is allowed to vary across individuals. Though not noticeably clear, Figure 1 displays a negative correlation between the PQOL di¤erence and the cluster unemployment rate. In addition, an ordinary least square (OLS) regression with the PQOL gap on the Y-axis reveals a negative, albeit insigni…cant, coe¢cient of -1.062, with a t-statistic of -1.45. Running the same regression separately for the PQOL of the employed with regular wages and the unemployed yields

[8] According to Clark (2003: p.338), explanations other than reduced stigmatizing e¤ects from higher regional unemployment are possible. An alternative is that, as unemployment in the area rises, relatively happier people are moving into unemployment. This will raise the unemployed's average well-being, providing that they are less a¤ected by this transition than others. However, he …nds no signi…cant correlation between the initial well-being score of those moving into unemployment and the regional unemployment rate for the UK sample, suggesting that a shift-share argument is unlikely to be behind the regional patterns.

coe¢cients (and t-statistics) of -1.911 (-3.24) and -0.849 (-1.39), respectively.

One question of interest is whether this correlation might be stronger for males than females. The idea that psychological consequences of others' unemployment may be distinct with respect to gender is justi…able, considering recent studies have revealed that males are more likely to be a¤ected by own unemployment than females (see Winkelmann and Winkelmann, 1995; Theodossiou, 1998). Figure 2, updating the analysis on the male sub-sample only, shows a more robust correlation between the average well-being gap and the cluster unemployment rate, with an estimated coe¢cient on the well-being gap of -2.061 and a t-statistic of -1.85. Running the same regression separately for the PQOL of the employed with regular wages and the unemployed for the male sample yields coe¢cients (and t-statistics) of -1.847 (-2.04) and 0.215 (0.22), respectively. The overall result provides some …rst evidence that the employed's well-being for South Africa may be decreasing with others' unemployment at a faster rate than the well-being of the unemployed; hence, the average well-being gap may be smaller with higher cluster unemployment rates. Also, the e¤ects might be stronger for unemployed males than for unemployed females, consistent to recent articles using data from more developed countries.

[FIGURE 2 HERE]

In an attempt to further test and replicate previous results with the South African data, we shall be, for the rest of this paper, focusing on the estimation of the following econometric equation:

$$PQOL_{ihc} = \bar{}_1(Ue)_i + \bar{}_2(OTHERUe)_i + \bar{}_3(Ue_i \pounds OTHERUe_i) + X'_{hc}{}_, + "_{ihc}; \qquad (3)$$

where $PQOL_{ihc}$ is the perceived quality of life reported by individual i living in household h and cluster c, Ue_i is a dummy variable with a value of 1 if the respondent is unemployed and 0 otherwise, and $OTHERUe_i$ is others' unemployment rate measured as the ratio of unemployed individuals, which includes all household members other than the PQOL respondent and people living in other households, to all working-age individuals in a given community cluster. The assumption is therefore that there is no gender distinction in making the comparisons for individuals. The variable X_{ihc} represents a vector of aggregated personal and other household and community characteristics a¤ecting well-being, whereas $"_{ihc}$ is the error term. Equation (3),

which allows for the inclusion of relevant others' unemployment at the regional level and its interaction with the respondent's unemployment status, is thus an extension to empirical models estimated in Panel C of Table 4, implying that PQOL is a function of others' unemployment in the community as well as unemployment in the household. In addition, as cluster unemployment rate is measured as the ratio of unemployed persons to all working-age individuals in the community, an interaction term between the non-participants (i.e. housewives, students, the retired, and the disabled) and cluster unemployment rate is also included in the estimation. We assume randomness in the PQOL respondent's perception of the well-being across other household members, and to the extent that some bias can be captured by controlling for the respondent status in the household (i.e. whether the individual is the head of the household or one of the living relatives in the household, for example)[9]. Under this assumption, we can infer the relationship between the reported well-being and the respondent's unemployment status directly, holding the unemployment status of other household members constant. The speci…cation of (3) thus allows us to test the hypothesis that, holding other things equal, own unemployment is detrimental to psychological well-being (or, $\bar{}_1 < 0$), but the negative e¤ect is smaller when the local unemployment rate is higher (or, $\bar{}_3 > 0$).

[TABLE 5 HERE]

Table 5 shows some preliminary evidence on the interaction between respondent's own and others' unemployment at the community level for South Africa. In Panel A the estimated coe¢cient for the interaction between respondent's own and others' unemployment on the full sample is strong and positive, while the main e¤ect of unemployment remains negative and signi…cant. The variable for cluster unemployment rate attracts a strong and negative coe¢cient, indicating that a lower well-being score is being recorded on average by the employed in higher unemployment regions[10], whereas the interaction between non-participants and cluster unemployment rate yields a positive coe¢cient of 1.060 (with the z-statistic of 2.50). Although

[9] The logic behind 'relation to head of house' control is because the weight on decision-making in the household may be dependent on the current individual status in the household. The distribution for the current sample is 46% head of house, 34% husband or wife or partner, 13% son or daughter, 2% sister or brother, and the rest are other delegated relations.

[10] This can be explained partly by the feeling of sympathy for the unemployed and heightened job insecurity as

the raw sum of "cluster unemployment rate" and "cluster unemployment rate and respondent unemployed" is positive (¡ 1:744 + 1:908 > 0), we fail to reject the hypothesis that it is signi…cantly di¤erent from zero.

Table 5, the second and third column, run the same well-being regression on males and females subsamples, respectively. The coe¢cient on self-employment is negative and signi…cant for males, while insigni…cant for females. This is consistent to Graham and Pettinato's (2001) …nding of lower life satisfaction among the self-employed in Latin Americas, which they interpret as being consistent to the idea that individuals in developing countries do not enter the self-employed sector by choice but rather are forced into it because there are no jobs available in the formal sector. Unemployment is associated negatively and signi…cantly with the reported well-being for both genders, although the coe¢cient is more signi…cant for males than for females. The correlation between cluster unemployment and the well-being of the employed is negative and strong for both genders, while the interaction terms between own and others' unemployment are signi…cantly positive for both samples. Nonetheless, we can only reject for the male sample the hypothesis that the sum of "cluster unemployment rate" and "cluster unemployment rate and male respondent unemployed" adds up to zero (¡ 1:611 + 3:015 = 0): others' unemployment in the community is associated with lower well-being score for the employed, but is signi…cantly positively correlated with the well-being of the unemployed for males. This result is consistent with the …ndings by Clark, Georgellis, and Sanfey (2001), using the GSOEP data, and Clark (2003), who …nd the psychological impacts of relative unemployment (comparisons with the past and current external cohorts, respectively) on both the employed and the unemployed to be stronger and more signi…cant for males than for females. On the other hand, the interaction between non-participants and others' unemployment is positive for both genders, but only signi…cant for females. This suggests that not only the unemployed gains from the presence of externalities that linked to others' unemployment, but so do the non-participants as well.

[TABLE 6 HERE]

Similar results are obtained when the model is re-estimated with gender distinction, changing the as-

others' unemployment increases (see OECD (1997)). In addition, higher cluster unemployment rate may also attract lower wages for the employed (Blanch‡ower and Oswald (1994)), for example.

sumption to individuals comparing with those of the same gender rather than with all of the unemployed population in the same region. See Table 6[11]. A comparison between log-likelihood ratios across all columns, however, indicates that the model estimated in Table 5 is a preferred model to the one estimated in Table 6, suggesting that individuals are more likely to compare with those of the other gender as well as the same gender in the same region. This is one of the paper's key …ndings, that, consistent to the results from more developed countries, the correlation between cluster unemployment rate and psychological well-being for South Africa is partly in‡uenced by the gender of the unemployed individual, given that other independent variables are held constant. In addition, qualitative results on the interaction between own and others' unemployment at the regional level do not change for the male sample if we divide cluster unemployment rate into (i) household, and (ii) people from other households living in the same area. On the other hand, the interaction term between own and household unemployment rate appears to be negative, albeit insigni…cant, across all groups. One explanation for this could be the nature of the PQOL, which measures well-being at the household level rather than at the individual level. The results, which separate unemployment rates by household and cluster in a single regression equation, are shown in appendix A.

It should also be noted that our measurement of unemployment rate (the ratio of unemployed persons to working-age individuals) is not directly comparable to Statistic South Africa (StatsSA)'s de…nition of broad rate that excludes nonunemployed individuals from the denominator in the calculation of unemployment rate. This is because we also wanted to observe from the estimation the correlation between the nonunemployment variables and the reported PQOL score, and their interactions with other unemployed individuals in the community. However, qualitative results do not change from replacing cluster unemployment rate with the broad rate de…nition. See Appendix B[12].

The other question of interest is whether the roles of own and reference unemployment are distinct across age-groups and races. Table 7 …rst estimates the well-being equation on di¤erent sets of age-group for males

[11] The average cluster unemployment rates for male and female in the sample are 0.108 (0.122) and 0.163 (0.123), respectively.

[12] The calculated unemployment rate by community cluster with SSA's broad de…nition is 21.1% for the sample, with a maximum of 92.9% for a single cluster.

and females sub-samples, respectively. We …nd for males that the negative correlation in own unemployment is most signi…cant for those in the 30-49 age-group. This is consistent to Warr (1992) and Clark and Oswald (1994)'s results where they …nd for the UK a U-shaped relationship between the psychological damage of own unemployment and age, with a minimum well-being for those aged 30-49. One plausible explanation is that young people worry less about unemployment as they may perceive unemployment as a transitory experience associated with labour market entry. The result is robust to controls of the interactions between own and cluster unemployment rate for each of the age-speci…c groups. The estimated coe¢cients on own unemployment for males and females are negative, albeit insigni…cant, for those aged 50 and over. The interaction terms for those aged 18-29 and 30-49 are positive and signi…cant in the male sub-sample regressions, whereas insigni…cant in all age-groups for females. The hypothesis that the sum of "cluster unemployment rate" and "cluster unemployment rate and respondent unemployed" adds up to zero can only be rejected for the male sample within 30-49 age-group. A similar result is obtained for the male sample when we specify age-speci…c di¤erences in the correlation between cluster unemployment rate and the well-being of the nonunemployed (not shown), suggesting that positive externality from others' unemployment may be strongest for the unemployed male of aged 30-49.

[TABLE 7 HERE]

Table 8 presents regression results on race-speci…c correlations for both males and females sub-samples. The results show that unemployment for blacks and nonblacks is signi…cantly associated with lower reported well-being in the regression in the male sub-sample regression, while the coe¢cient on unemployment is negative and signi…cant for nonblack females only. The interaction between own and cluster unemployment rate is positive for both racial groups under males sub-sample analysis, but is more signi…cant for nonblacks than for their blacks counterpart. The exception is again for females.

[TABLE 8 HERE]

By way of illustrations, Table 9 calculates from the sample means the estimated e¤ect of the unemployed variables on the probability of reporting a PQOL score of 4 or 5 (satis…ed/very satis…ed category). Figures

are reported for males from Table 5's ordered probit regression. It can be seen from Table 9 how the gap between the employed and the unemployed in the probability of reporting a well-being score of 4 or 5 decreases as cluster unemployment rate rises. An increase in the cluster unemployment rate from 10% to 15% reduces this di¤erence from around 7% to 5%, while a further 5% rise in the percentage point in the cluster unemployment rate takes this di¤erence down from 5% to 3%. The estimates also imply that, controlling for other relevant factors, the employment and unemployment have equal well-being at a cluster unemployment rate of around 28% (¡ 0:835 + 3:015 £ 0:28 = 0), suggesting that around 70 unemployed male (or roughly a third of the unemployed male observations) would have reported a higher well-being than the employed male in the sample. Hence there may be some cases where, in an extremely high unemployment environment, the e¤ects of social sanction is reversed towards the minorities who are in employment.

[TABLE 9 HERE]

5 Conclusion

This paper has used a rich set of South African data to analyse the relationship between well-being and average unemployment of other people living in the same region. The …rst …nding is that unemployment, whether it was measured at the individual or household level, is associated negatively with the reported perceived quality of life for the household, even when a large set of individual and household variables are controlled for. Hence, the results on unemployment seem to con…rm that unemployment is largely involuntary in South Africa as is the case in many other developed countries. Secondly, we …nd the unemployed's well-being to be strongly positively correlated with others' unemployment at the regional level. Hence, our results provide a supporting evidence to Clark (2003)'s …nding on a data from UK that it may be psychologically easier to be unemployed in a region with high levels of joblessness. In other words, people may dislike unemployment, but if unemployment becomes a norm for the society they are living in, then it may not hurt as much. In addition, this positive correlation is more signi…cant for males than for females. Furthermore, we also show in our well-being regression equations that not only the unemployed bene…ts from

the presence of externality linked to others' unemployment in the region, but so do the non-participants as well. The reported well-being of non-participating females is shown to be positively correlated with others' unemployment at the regional level.

As for the novelty of using the South African data, where the unemployment rate is extremely high by international standards, we have been able to show that there may be some cases, in an unusually high unemployment regions, where unemployed individuals actually report higher well-being than those in work. The estimated coe¢cients on the male sample suggest that employment and unemployment have equal well-being at a cluster unemployment rate of around 28%. This means that around a third of the unemployed males would have reported higher well-being than the employed in our sample. However, due to the relatively small cell-size on the number of unemployed males and the cross-sectional nature of the SALDRU data, the interpretation of these results should be treated with caution.

In sum, our results provide an evidence supporting the notion that there are positive externalities from others' unemployment on the unemployed's well-being, even when the aggregated unemployment is extremely high. Providing that these results hold in general, the …nding of this paper may help to explain why unemployment is more persistent in some regions of South Africa than others.

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Table 1: The Distribution of Perceived Quality of Life (PQOL) responses in South Africa (1993)

Whole Sample	Observations	Percentage	Cumulation
Very Dissatisfied	1510	23.53%	23.53%
Dissatisfied	2058	32.08%	55.61%
Neither	617	9.62%	65.23%
Satisfied	1738	27.09%	92.32%
Very Satisfied	493	7.68%	100.00%
Total	**6416**	**100%**	**100%**

Note: The Perceived Quality of Life (PQOL) question was "Taken everything into account, how satisfied is this household with the way it lives today?" There were five possible answers, with the lowest well-being response being 'very dissatisfied' and the highest well-being response being 'very satisfied'. The sample contains only of PQOL respondents aged 18 to 65.

Table 2: The Perceived Quality of Life Measure of Well-being by Current Labour Force Status

		Labour Force Status		t-statistics for the test of the null hypothesis that the two means are equal
		Regular Wage Employment	Unemployed	
In Work and Unemployment	Mean	2.927	2.118	15.249
	Std.Dev.	(1.32)	(1.12)	
		Non-participants	Unemployed	
Non-participants and Unemployed	Mean	2.513	2.118	7.597
	Std.Dev.	(1.26)	(1.12)	
		Regular Wage Employment	Informal Employment	
Formal and Informal Employment	Mean	2.927	2.463	-8.133
	Std.Dev.	(1.32)	(1.34)	

Table 3: The Household Rates of Current Labour Force Status by Well-being Groups

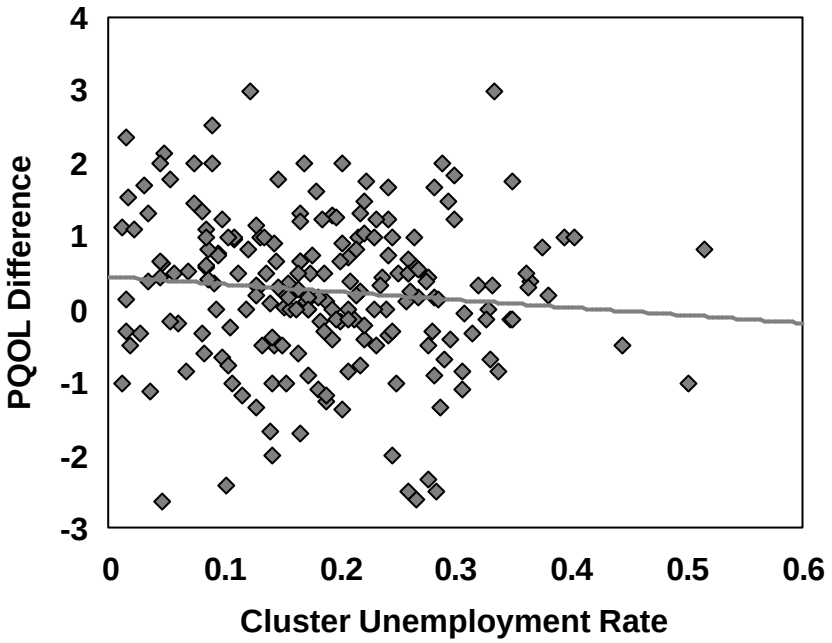
		Very Dissatisfied	Dissatisfied	Neither	Satisfied	Very Satisfied
Unemployed	**Mean**	15.87%	15.21%	8.27%	5.94%	3.41%
	Std.Dev.	(0.297)	(0.292)	(0.218)	(0.187)	(0.142)
Regular wage employment	**Mean**	42.45%	39.17%	54.31%	58.44%	60.29%
	Std.Dev.	(0.405)	(0.393)	(0.409)	(0.400)	(0.389)
Informally employed	**Mean**	10.29%	8.59%	10.36%	9.42%	13.09%
	Std.Dev.	(0.374)	(0.334)	(0.367)	(0.330)	(0.406)
Non-participants	**Mean**	37.56%	42.22%	33.13%	31.87%	32.16%
	Std.Dev.	(0.366)	(0.378)	(0.355)	(0.353)	(0.349)
No. of observation		1,510	2,058	617	1,738	493

Table 4: Well-being Regressions at the Individual- and Aggregated Household level for South Africa (ordered probit), 1993

	At Individual Level				At Household Level	
	Panel A		Panel B		Panel C	
	Coefficient	Z-ratio	Coefficient	Z-ratio	Coefficient	Z-ratio
(1) LABOUR FORCE STATUS						
Unemployed	-0.662	(-8.27)	-0.197	(-2.95)	-0.266	(-2.66)
Self-employed	-0.167	(-2.09)	-0.128	(-1.82)	-0.383	(-0.90)
Housewife/Formal education	-0.280	(-3.89)	-0.070	(-1.18)	-0.067	(-0.72)
Casual wage employment	-0.659	(-6.38)	-0.310	(-3.31)	0.345	(0.79)
Retired	-0.254	(-2.84)	-0.157	(-1.68)	0.011	(0.11)
Disabled	-0.701	(-6.23)	-0.243	(-2.24)	-0.088	(-0.55)
(2) HOUSEHOLD CHARACTERISTICS						
Coloured			0.331	(2.43)	0.338	(2.49)
Indian			0.353	(2.83)	0.346	(2.85)
White			0.572	(4.42)	0.547	(3.95)
Urban (=1)			-0.087	(-1.12)	-0.108	(-1.39)
HHSize (members)			-0.030	(-3.65)	-0.034	(-4.22)
Log of Household Monthly Income			0.088	(3.97)	0.075	(3.34)
Same Wealth as Parents at same age			0.475	(8.82)	0.482	(8.87)
Richer than Parents at same age			0.475	(9.77)	0.477	(10.21)
Relative Income			-0.005	(-0.42)	-0.002	(-0.15)
(3) RESPONDENT'S PERSONAL CHARACTERISTICS						
Education: STD 1-3			0.062	(1.13)	0.154	(1.87)
Education: STD 4-6			-0.127	(-2.17)	-0.124	(-1.15)
Education: STD 7-8			-0.088	(-1.50)	0.041	(0.40)
Education: STD 9-10			-0.139	(-2.25)	0.081	(0.85)
Education: STD 10 or Higher			-0.005	(-0.06)	0.279	(2.42)
Male (=1)			-0.048	(-0.79)	0.076	(0.56)
Age			-0.052	(-4.08)	-0.017	(-2.38)
Age^2/100			0.058	(3.91)	0.023	(2.31)
Sick for the last 2 weeks (=1)			-0.012	(-0.17)	-0.004	(-0.03)
Relationship to Head (19)	No		Yes		Yes	
Durable Assets Ownership (11)	No		Yes		Yes	
Controls for Other Labour Market Status (3)	No		Yes		Yes	
Cluster Controls	No		Yes		Yes	
N	6416		6416		6416	
Log-Likelihood	-9381.652		-8469.744		-8490.861	
Pseudo^2	0.0163		0.1119		0.1097	

Note: Weighted ordered probit model with robust standard errors; z-values in parentheses.
Relative income = household income/avg. community income. Durable assets ownership (11) includes (i) motor vehicle, (ii) bicycles, (iii) electric stove, (iv) electric kettle, (v) fridge, (vi) gas stove, (vii) geyser (or domestic gas water heater), (viii) primus cooker, (ix) radio, (x) telephone, (xi) television. Controls for other labour market status (3) include casual wage employment, housewife/in formal education, and the retired. Cluster controls are types of community roads, public transports (yes/no), provinces (9), and cluster food prices. Reference variables are: Black (Race), Rural (Rural/Urban), and Poorer than Parents at the same age.

Figure 1: The Perceived Quality of Life Gap between Respondents in Work and Unemployed and Regional Unemployment Rates



Note: Running an OLS regression yields the coefficient (t-statistic) on the difference between employed and unemployed of -1.063 (-1.45).

Figure 2: Cluster Unemployment Rates and The Perceived Quality of Life Gap between Respondents in Work and Unemployed for the Male Sample

Note: Running an OLS regression yields the coefficient (t-statistic) on the difference between employed and unemployed of -2.061 (-1.85).

Table 5: Well-being Regressions and Cluster Unemployment Rates

	Full Sample		Male		Female	
	Coefficient	Z-ratio	Coefficient	Z-ratio	Coefficient	Z-ratio
(1) LABOUR FORCE STATUS						
Unemployed	-0.524	(-3.54)	-0.835	(-3.56)	-0.344	(-2.45)
Self Employed	-0.081	(-1.24)	-0.243	(-1.99)	0.032	(0.41)
Housewife/Formal education	-0.162	(-1.76)	-0.165	(-0.81)	-0.132	(-1.62)
Casual wage employment	-0.232	(-2.77)	-0.320	(-2.59)	-0.096	(-0.94)
Retired	-0.150	(-1.50)	0.025	(0.16)	-0.182	(-1.69)
Disabled	-0.352	(-2.74)	-0.222	(-1.15)	-0.335	(-2.44)
Cluster Unemployment Rate	-1.744	(-3.14)	-1.611	(-2.31)	-1.493	(-3.81)
Cluster Unemployment Rate*Respondent unemployed	1.908	(3.04)	3.015	(3.03)	1.377	(2.40)
Cluster Unemplyment Rate*Non-participants	1.060	(2.50)	0.728	(0.99)	1.019	(2.65)
(2) HOUSEHOLD CHARACTERISTICS						
Coloured	0.299	(2.17)	0.457	(2.63)	0.186	(1.19)
Indian	0.271	(2.14)	0.577	(3.14)	0.131	(0.93)
White	0.445	(3.11)	0.591	(3.51)	0.378	(2.12)
Urban (=1)	-0.045	(-0.59)	0.040	(0.39)	-0.143	(-1.73)
HHSize (members)	-0.029	(-3.91)	-0.027	(-1.81)	-0.031	(-4.03)
Log of Household Monthly Income	0.069	(3.20)	0.091	(2.28)	0.080	(3.50)
Same Wealth as Parents at same age	0.468	(9.06)	0.421	(5.69)	0.451	(9.39)
Richer than Parents at same age	0.471	(9.67)	0.397	(5.45)	0.504	(8.95)
Relative Income	0.003	(0.28)	-0.014	(-1.28)	0.019	(1.22)
(3) AGGREGATED PERSONAL CHARACTERISTICS						
Proportion of HH members with						
Education: STD 1-3	0.152	(1.89)	0.264	(2.39)	0.033	(0.31)
Education: STD 4-6	-0.131	(-1.25)	-0.120	(-1.07)	-0.147	(-1.13)
Education: STD 7-8	0.062	(0.65)	0.123	(1.17)	-0.058	(-0.47)
Education: STD 9-10	0.091	(0.94)	0.081	(0.65)	0.059	(0.43)
Education: STD 10 or Higher	0.277	(2.37)	0.431	(2.49)	0.126	(0.90)
Proportion of HH members who were						
Male	0.041	(0.33)	0.282	(1.86)	-0.003	(-0.03)
Sick for the last 2 weeks	-0.010	(-0.08)	0.141	(1.18)	-0.282	(-2.29)
Average age	-0.019	(-2.53)	-0.028	(-2.23)	-0.018	(-1.89)
Average age^2/100	0.026	(2.53)	0.036	(2.14)	0.026	(1.92)
N	6416		2320		4096	
Log Likelihood	-8446.202		-2963.965		-5355.989	
Pseudo^2	0.1144		0.1511		0.1102	
Chi^2 statistic (1) for the test that Cluster Ue +						
Cluster Ue*Respondent unemployed = 0:	0.15 [0.703]		3.30 [0.069]		0.07 [0.794]	

Note: All regression controls as in Panel A, Table 4.

Table 6: Well-being Regressions with Cluster Unemployment Rates by Gender

	Full Sample		Male		Female	
	Coefficient	Z-ratio	Coefficient	Z-ratio	Coefficient	Z-ratio
(1) LABOUR FORCE STATUS						
Unemployed	-0.432	(-3.31)	-0.609	(-3.05)	-0.276	(-2.18)
Self Employed	-0.094	(-1.39)	-0.259	(-2.11)	0.023	(0.29)
Housewife/Formal education	-0.144	(-1.68)	-0.119	(-0.62)	-0.138	(-1.75)
Casual wage employment	-0.243	(-2.84)	-0.339	(-2.73)	-0.108	(-1.04)
Retired	-0.132	(-1.42)	0.053	(0.34)	-0.190	(-1.84)
Disabled	-0.332	(-2.70)	-0.188	(-1.04)	-0.343	(-2.56)
Cluster Unemployment Rate by Gender	-1.289	(-2.82)	-0.805	(-1.35)	-1.287	(-3.21)
Cluster Unemployment Rate by Gender*Unemployed	1.465	(2.75)	1.905	(2.31)	1.097	(2.09)
Cluster Unemployment Rate by Gender*Non-participants	0.898	(2.34)	0.366	(0.55)	1.053	(2.77)
(2) HOUSEHOLD CHARACTERISTICS	Yes		Yes		Yes	
(3) AGGREGATED PERSONAL CHARACTERISTICS	Yes		Yes		Yes	
N	6416		2320		4096	
Log Likelihood	-8460.377		-2972.436		-5358.601	
Pseudo^2	0.1129		0.1487		0.1098	

Table 7: Well-being Regressions and Cluster Unemployment Rates: by Age Group

	Male						Female					
	18<age<30		30<=age<50		age>=50		18<age<30		30<=age<50		age>=50	
	Coefficient	Z-ratio	Coefficient	Z-ratio	Coefficient	Z-ratio	Coefficient	Z-ratio	Coefficient	Z-ratio	Coefficient	Z-ratio
(1) LABOUR FORCE STATUS												
Unemployed	-0.739	(-1.85)	-1.069	(-3.06)	-0.049	(-0.09)	-0.311	(-1.52)	-0.411	(-2.20)	-0.185	(-0.39)
Self Employed	0.311	(-1.24)	-0.501	(-3.02)	-0.188	(-0.79)	0.517	(2.73)	-0.067	(-0.69)	-0.023	(-0.13)
Housewife/Formal education	-0.304	(-1.11)	-0.676	(-1.16)	0.906	(1.27)	-0.253	(-1.61)	-0.109	(-1.09)	-0.070	(-0.39)
Casual wage employment	0.167	(0.58)	-0.628	(-3.28)	-0.032	(-0.12)	-0.088	(-0.41)	-0.141	(-0.97)	-0.027	(-0.10)
Retired			-1.648	(2.22)	0.130	(0.64)			0.187	(0.50)	-0.076	(-0.45))
Disabled	-0.811	(-2.06)	-0.408	(-0.86)	-0.098	(-0.28)	-0.668	(-1.90)	-0.354	(-1.97)	-0.133	(-0.54)
Cluster Unemployment Rate	-3.347	(-3.37)	-1.319	(-1.73)	-1.513	(-1.65)	-2.283	(-3.41)	-1.111	(-2.51)	-2.129	(-2.81)
Cluster Unemployment Rater*Unemployed	4.471	(2.68)	3.669	(2.63)	-0.905	(-0.41)	2.132	(2.26)	1.118	(1.47)	1.330	(0.90)
Cluster Unemployment Rater*Non-Participants	2.940	(2.47)	1.274	(0.59)	0.626	(0.55)	2.158	(2.79)	0.895	(1.83)	0.767	(0.99)
(2) HOUSEHOLD CHARACTERISTICS	Yes		Yes		Yes		Yes		Yes		Yes	
(3) AGGREGATED PERSONAL CHARACTERISTICS	Yes		Yes		Yes		Yes		Yes		Yes	
N	697		1169		454		1177		2076		843	
Log Likelihood	-851.873		-1496.685		-538.540		-1514.854		-2717.205		-1037.590	
Pseudo^2	0.1709		0.1549		0.2102		0.1208		0.1114		0.1575	

Table 8: Well-being Regressions and Cluster Unemployment Rates: by Race

	Male				Female			
	Black		Non-Black		Black		Non-Black	
	Coefficient	Z-ratio	Coefficient	Z-ratio	Coefficient	Z-ratio	Coefficient	Z-ratio
(1) LABOUR FORCE STATUS								
Unemployed	-0.741	(-2.52)	-1.245	(-2.61)	-0.381	(-2.24)	-0.345	(-1.19)
Self Employed	-0.119	(-0.79)	-0.486	(-2.37)	0.050	(0.55)	-0.091	(-0.61)
Housewife/Formal education	-0.286	(-1.02)	-0.095	(-0.22)	-0.291	(-2.06)	0.109	(1.05)
Casual wage employment	-0.330	(-2.33)	-0.191	(-0.64)	-0.220	(-1.65)	0.234	(1.49)
Retired	-0.296	(-1.11)	0.151	(0.64)	-0.412	(-2.55)	0.395	(2.32)
Disabled	-0.453	(-1.54)	-0.211	(-0.51)	-0.525	(-2.96)	0.388	(0.66)
Cluster Unemployment Rate	-1.594	(-1.94)	-1.533	(-1.50)	-1.657	(-3.32)	-1.451	(-1.97)
Cluster Unemployment Rater*Unemployed	2.457	(2.06)	6.432	(2.86)	1.341	(1.93)	2.145	(1.40)
Cluster Unemployment Rater*Non-Participants	1.278	(1.22)	2.831	(0.80)	1.497	(2.59)	-0.071	(-0.09)
(2) HOUSEHOLD CHARACTERISTICS	Yes		Yes		Yes		Yes	
(3) AGGREGATED PERSONAL CHARACTERISTICS	Yes		Yes		Yes		Yes	
N	1574		746		3050		1046	
Log Likelihood	-2000.913		-905.997		-3961.329		-1296.771	
Pseudo^2	0.1670		0.1010		0.0593		0.1077	

Table 9: Predicted Probabilities of Reporting Satisfied in the PQOL Score (4,5)

	Males sample; Ordered Probit (Panel B, Table 5)
Employed; Cluster unemployment rate of 10%	11.53%
Employed; Cluster unemployment rate of 15%	10.04%
Employed; Cluster unemployment rate of 20%	8.70%
Unemployed; Cluster unemployment rate of 10%	4.17%
Unemployed; Cluster unemployment rate of 15%	4.83%
Unemployed; Cluster unemployment rate of 20%	5.58%

Appendix A: Well-being Regressions with Separate Unemployment Rates by Household and Community Cluster

	Full Sample		Male		Female	
	Coefficient	Z-ratio	Coefficient	Z-ratio	Coefficient	Z-ratio
(1) LABOUR FORCE STATUS						
Unemployed	-0.355	(-2.41)	-0.893	(-3.50)	-0.142	(-0.85)
Self Employed	-0.070	(-0.93)	-0.177	(-1.28)	0.012	(0.13)
Housewife/Formal education	-0.103	(-1.54)	-0.436	(-2.36)	-0.061	(-0.79)
Casual wage employment	-0.205	(-2.00)	-0.369	(-2.14)	-0.058	(-0.49)
Retired	-0.098	(-1.10)	-0.035	(-0.20)	-0.134	(-1.17)
Disabled	-0.320	(-2.85)	-0.418	(-1.89)	-0.312	(-2.23)
Household Unemployment Rate	-0.053	(-0.61)	-0.209	(-0.95)	-0.032	(-0.32)
Household Unemployment Rate*Unemployed	-0.105	(-0.62)	0.186	(0.51)	-0.141	(-0.69)
Cluster Unemployment rate (excl.HH)	-1.131	(-2.96)	-1.260	(-2.26)	-1.081	(-2.37)
Cluster Unemployment Rate (excl. HH)*Unemployed	1.593	(2.53)	3.218	(3.09)	1.016	(1.38)
Cluster Unemployment Rate (excl. HH)*Non-participants	0.738	(1.96)	1.815	(2.40)	0.618	(1.38)
(2) HOUSEHOLD CHARACTERISTICS	Yes		Yes		Yes	
(3) AGGREGATED PERSONAL CHARACTERISTICS	Yes		Yes		Yes	
N	4523		1421		3102	
Log Likelihood	-5903.158		-1803.473		-4054.450	
Pseudo^2	0.1242		0.1545		0.1158	

Appendix B: Well-being Regressions with Broad Definition of Unemployment Rate

	Full Sample		Male		Female	
	Coefficient	Z-ratio	Coefficient	Z-ratio	Coefficient	Z-ratio
(1) LABOUR FORCE STATUS						
Unemployed	-0.595	(-4.34)	-0.609	(-3.05)	-0.486	(-3.41)
Self Employed	-0.138	(-1.91)	-0.259	(-2.11)	0.003	(0.04)
Casual wage employment	-0.259	(-3.11)	-0.339	(-2.73)	-0.081	(-0.79)
Cluster Unemployment Rate (Broad)	-1.023	(-3.14)	-0.805	(-1.35)	-1.020	(-4.09)
Cluster Unemployment Rate (Broad)*Unemployed	1.196	(3.72)	1.905	(2.31)	1.120	(3.57)
(2) HOUSEHOLD CHARACTERISTICS	Yes		Yes		Yes	
(3) AGGREGATED PERSONAL CHARACTERISTICS	Yes		Yes		Yes	
N	4030		2002		2028	
Log Likelihood	-5282.758		-2522.377		-2657.201	
Pseudo^2	0.1248		0.1629		0.1191	